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AUTHOR Yutzey, Susan D.
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ABSTRACT

Acknowledgement patterns in the "Journal of Higher Education" (JHE) from 1972 to 1993 inclusive were examined using Blaise Cronin's (1991) six-part typology. In the 21-year period, 38.8% of the articles had a formally worded acknowledgement with the majority (81.2%) of those being resource-related, 55% concept-related, and 32% procedure-related. The pattern of acknowledgements resembled that found by Cronin, who investigated acknowledgements patterns in information science. Eleven individuals out of 327 were highly acknowledged as providing inspiration (prime movers) or critical comment and feedback (trusted assessors). Seven of the 11 currently hold faculty positions in prestigious departments of education; one holds a faculty position in sociology; and three held administrative positions in higher education. Four of the 11 who were highly acknowledged were women. Fourteen percent of the acknowledgements went to the highly acknowledged women in the decade of the 1970s, compared to 42.8% in the 1980s and 30.4% in the 1990s. The relationship between those who were highly acknowledged in JHE and those who were highly cited in education journals was statistically not significant. Nine tables and one figure depict information about acknowledgements. A list of education journals is provided in the appendix. Nine tables and one figure illustrate the text. (Contains 18 references.) (Author/AEF)

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ACKNOWLEDGEMENT PATTERNS IN THE JOURNAL OF HIGHER EDUCATION 1972-1993

A Master's Research Paper submitted to the
Kent State University School of Library and Information Science
in partial fulfillment of the requirements
for the degree Master of Library Science

by

Susan D. Yutzey

August, 1995

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ABSTRACT

Acknowledgement patterns in the **Journal of Higher Education** (**JHE**) from 1972 to 1993 inclusive are examined using Blaise Cronin's (1991) six-part typology. In the twenty-one year period, 38.8 percent of the articles had a formally worded acknowledgement with the majority of those (81.2%) being resource-related; 55 percent concept-related, and 32 percent procedure-related. Despite education's professional orientation, the pattern of acknowledgements resembled that found by Cronin who investigated acknowledgements patterns in information science.

Eleven individuals (of 327) were highly acknowledged as providing inspiration (prime movers) or critical comment and feedback (trusted assessors). Seven of the eleven currently hold faculty positions in prestigious departments of education; one holds a faculty position in sociology. Three either currently hold or did hold at the time they were acknowledged administrative positions in higher education. Four of the eleven who were highly acknowledged were women.

As the decades of 1970-79, 1980-89, and 1990-93 were examined, fourteen percent of the acknowledgements went to those highly acknowledged women identified above in the decade of the 1970s compared to 42.8 percent in the 1980s, and 30.4 percent in the 1990s.

The relationship between those who were highly acknowledged in **JHE** and those who were highly cited in education journals was statistically not significant (Spearman R was -.284855; gamma was -.219512).

Master's Research Paper by

Susan D. Yutzey

B.A., Muskingum College, 1971

M.A., Bowling Green State University, 1973

Ph.D., The Ohio State University, 1988

M.L.S., Kent State University, 1995

Approved by

Adviser_____Date_____

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INTRODUCTION

"This research was supported in part through a Spencer Foundation Young Scholars grant and a grant for the Center for Women's Studies of The Ohio State University.
I would like to thank Sue A. Blanshan, Gay B. Hadley, Linda K. Johnsrud, Kathryn M. Moore, and Anne S. Pruitt for helpful comments on a previous draft, and Nora C. Groves for assistance with the data analysis." [1]

Many scholarly articles carry personal acknowledgements of one kind or another. In most journals, acknowledgements are set apart from the article by a different type set. Acknowledgements, much like citations, with which they share certain textual and functional features (Cronin, McKenzie, and Stiffler, 1992) can serve one or more purposes, and consequently can be analyzed from a number of perspectives. They can serve as measures of trusted assessorship (Chubin, 1975); hidden influence (Cronin, 1992); credit or reward (MacKintosh, 1972); exchanges of gifts (McCain, 1991); fixing or ordering devices, like synopses, footnotes or references (Ben-Ari, 1987); ritualistic appendages (Cronin, 1991); and expressions of solidarity, characteristic of scholarly fields dominated by schools or organized mentor systems (Ben-Ari, 1987). Despite their generous appearances in scholarly articles, there has been scant formal investigation of their cognitive and social significance in the primary communication process (Cronin, McKenzie, and Stiffer, 1992).

As Cronin (1992) notes, acknowledgements from a functional perspective, convey public gratitude for essentially private gestures of assistance which contributed in some way to the research or scholarship being reported. From a symbolic perspective, however, they may serve a much wider purpose. As Cronin states, "acknowledging can be used to send out meta-

[1] Mary Ann D. Sagaria,"Administrative Mobility and Gender," **Journal of Higher Education 59** (May/June 1988): 305

messages, such as: 'I belong to this tribe,' or "I subscribe to this faith,' particularly in fields with a high degree of intellectual or ideological factionalism. Acknowledgements, Cronin explains, can serve to locate the author in a particular social and cognitive milieu.

And yet, little is known in a formal sense about the functional significance of acknowledgements or about acknowledgement behavior and distributional patterns within and among disciplines (Cronin, McKenzie, and Stiffler, 1992). Ben-Ari (1987) analyzed 200 ethnographies but did not rely on any formal data presentation and analysis. There have been three bibliometric studies of personal acknowledgements in scholarly communication. McCain (1991) examined 241 experimental papers in the 1988 volume of **Genetics** and subsequently developed a classification scheme that accounted for the informal communication that takes place in genetics research - most specifically as the channel for transmitting experimental materials, unpublished protocols, and unpublished results. Cronin (1991) classified all acknowledgements attached to research articles in the **Journal of the American Society for Information Science (JASIS)** for the period 1970 to mid-1990. MacKintosh (1972), as part of his dissertation research, examined acknowledgements in the **American Sociological Review** and developed a typology.

As Cronin (1992) states, "intuitively, it seems plausible that structural, cultural, organizational, behavioral, and literary differences between disciplines would have an influence on acknowledgement practice." In genetics, for example, 95 percent of all papers in the journal **Genetics** carry an acknowledgement of some kind compared with 47 percent in **JASIS**. Among geneticists, the informal communication of experimental materials and unpublished protocols is common practice (McCain, 1991). Consequently 25 percent of all acknowledgements (59 percent

of all articles) "thank someone for personally providing a stock, strain, phage, or plasmid, or identify an individual as the source without a literature citation (McCain, 1991, p. 507).

Information scientists, on the other hand, do not trade strains or plasmids, so the level and style of acknowledgements one would expect to be quite different. Cronin (1991) found that over 90 percent of the 444 acknowledgement-bearing **Journal for the American Society for Information Science** articles were resource related, that is, they acknowledged institutional backing, funding sponsors, or facilities. Perhaps most interesting to Cronin was that over half of the acknowledgements were concept related, that is to say, they acknowledged either a prime mover or a trusted assessor.

The affect and intimacy found in anthropologists' acknowledgements are certainly different than the style favored by geneticists and information scientists. Acknowledging family and friends, who participate only marginally in the anthropological community, in publications designed for public consumption is quite common. Ben-Ari explains why this is: "the answer lies in the potential of such passages to create images of ethnographers as social persons....through the transmission of messages about kith and kin, anthropologists strive to convey a sense of themselves as total persons not limited to professional selves" (p. 76, 78). These studies suggest that acknowledgement patterns are quite different in the fields of genetics, information science, and anthropology.

Education is generally regarded as a professional field (Li, 1990). Knowledge is sought in the professional field to prepare an individual for a specific occupation; it differs from the academic field in which the imparting of a body of information is the primary aim without explicit concern as to its practical application (Laska, 1973). It is generally regarded as a field within the

social sciences (Li, 1990; Rice, 1989). Education depends upon other disciplines for its basic content (Li, 1990). Education also draws heavily from other research methodologies and for this reason, education has a definite interdisciplinary flavor (Rice, 1989). The general purpose of this study is to determine the pattern of acknowledgements in the field of higher education. It is also to see if the pattern of acknowledgements is similar to that found in the fields of genetics, information science, and anthropology or if the pattern of acknowledgements is different because of the professional dimension.

The **Journal of Higher Education** (**JHE**), the second most highly cited journal in the field of higher education (Budd, 1990), was selected to examine the acknowledgement patterns in the field of higher education. Acknowledgments from the period 1972 to 1993 inclusive were analyzed for their content.

A review of the literature is followed by the purpose for the research, including the research objectives; the method by which the researcher gathered and analyzed the data; the results of the study; a discussion of the results; conclusions and suggestions for further study.

REVIEW OF THE LITERATURE

In the review of the literature, the acknowledgement studies by Ben-Ari, MacKintosh, McCain, and Cronin are examined in greater depth. In addition, the relationship between citations and acknowledgements; alternative measures of scholarship in academe; and the changing male/female demographics in the discipline of education are discussed.

Ben-Ari (1987) examined about two hundred ethnographies. Based on his analysis of these ethnographies and discussions with anthropologists from the United States, Britain, Canada, Australia, France, Israel, and Japan, Ben-Ari concluded that acknowledgements are special textual

constructs. They are "special" both because their formulation is governed by conventions which are different from those of the main text and because they involve a unique potential for expressing issues not usually addressed in standard ethnographies (Ben-Ari, 1987, p. 79). Acknowledgements in ethnographies may serve as a strategy for gaining professional attention, with the most common statements being directed to "seniors": teachers and older colleagues, supervisors and mentors, guides and intellectual influences. Acknowledgements may also serve as a means of expressing hostility or unmasking tension about the basic asymmetry in the professional community. Finally, acknowledgements in ethnography may also perform integrating or differentiating functions by their creation of solidarity or exclusion (Ben-Ari, 1987, p. 71). "Name dropping" in acknowledgements becomes a means by which ethnographers seek to establish various basis of their professional identity; for example, ties with intellectual ancestors or distinctions between subgroups in the community.

Rather than quantify his findings, Ben-Ari developed categories of acknowledgements based on examining ethnographies in anthropology. MacKintosh, McCain, and Cronin; however, chose to quantify their studies for purposes of determining patterns of acknowledgements in the fields of sociology, genetics, and information science respectively. Each derived a typology of acknowledgements.

MacKintosh's 1972 dissertation, **Acknowledgement Patterns in Sociology**, was the first research study to investigate acknowledgement patterns. MacKintosh was interested in systematically looking at the phenomenon of the reading acknowledgement which he defined as "criticism of a general nature prior to publication" to determine who acknowledges and what kind of people are acknowledged. He examined the 1967 volume of the **American Sociological**

Review and sent letters requesting bibliographies from 80 journal article authors who had published in that particular year. Of the 57 bibliographies that were returned, MacKintosh scrutinized every available journal article that had been published by these authors. He then coded the acknowledgements and developed a classification scheme that included the following acknowledgement categories: facilities, access to data, and help rendered by individuals. His classification scheme is displayed in Table 1. The facilities category includes all those

Table 1: MacKintosh's sub-types of acknowledgements

Facilities	**Access to data**	**Help of individuals**
Institutional affiliation of scientist	Permission to collect	Clerical
Aids to research	Permission to analyze (scientist or non-scientist)	Non-science expert
		Expert in different field
		Technical assistance
		Expert in same field
		Critical comment

acknowledgements that focused on institutional affiliation and aids to research given to the author by the employer (e.g., money, equipment). The access to data category encompasses all those acknowledgements that gave permission to collect or to analyze the data. The third category, help rendered by individuals, covers those acknowledgements that dealt with help from clerical and technical persons, non-science experts, experts in a different field from that of the author, experts in the same field who provide both general and specific assistance, and colleagues who provide critical comment. It is this last category that MacKintosh analyzed in greater depth in his dissertation. The acknowledgement alludes to "helpful critical comments,"

although it does not indicate the precise nature of the aid rendered and as MacKintosh says, "we are left in the dark as to their substance." MacKintosh provided an example of such an acknowledgement as it was most commonly rendered in the literature as: "The writer would like to express his appreciation to Professors X, Y, and Z who made many valuable suggestions upon reading a previous draft of this paper." MacKintosh then sent questionnaires to the 57 authors requesting information on their patterns of consultation.

MacKintosh discovered that the frequent acknowledgers proved to be those individuals working in prestigious sociology departments. He also found that older people in his sample acknowledged less frequently than the younger. "Dependency," that is the propensity of authors to acknowledge for facilities, money, and access to data did make a difference in the types of people by area of specialization who were acknowledged. MacKintosh's conclusion was that to acknowledge and to be acknowledged is not one of the vital components of the reward system of science.

Katherine McCain in "Communication, Competition, and Secrecy: The Production and Dissemination of Research-Related Information on Genetics" undertook two related explorations in the communication of research-related information in genetics. One aspect of the study included a series of focused interviews with experimental geneticists to establish a set of basic scenarios for the exchange of genetic materials and unpublished research protocols, to identify general factors affecting researcher's behavior and expectations as information requesters and as information providers, to describe under what conditions the flow of information may be diverted or restricted, and to ascertain how the association of research-related information and its source is maintained (McCain, 1991). Another aspect of the study

was to conduct a bibliometric analysis of personal acknowledgements in recent research articles.

McCain's bibliometric analysis of acknowledgements consisted of scanning 241 experimental papers published in the journal **Genetics** in 1988. Each was classified as a type of information or service provided. She identified five acknowledgement categories: access to research-related information; access to unpublished results, data (unless linked specifically to experimental materials - then it was linked to access to research-related information); peer interactive communication; technical assistance; and manuscript preparation. Within each of these categories were more specific categories as shown in Table 2.

Table 2: McCain's classification of personal acknowledgements in articles published in Genetics 1988

Research - related information	Unpublished data/results	Peer interactive communication	Technical assistance	Manuscript preparation
Access to experimental materials	Provided unpublished data or results	Provided specific information	Thanked for performing specific analyses/procedures	Typing, keyboarding
Access to unpublished protocols		Provided critical comments on manuscript	Thanked for "collaboration"	Graphics, photography
Access to facilities or technology		Provided advice and discussion, insights	Provided technical assistance	
Access to unpublished (homegrown) technology		Provided inspiration		

McCain discovered that twelve of the papers had no personal acknowledgements and nineteen acknowledgements were unclassifiable. Fifty-nine percent of the acknowledgements were for research-related information, specifically for organisms, phages, plasmids. Thirty-two percent were acknowledged for providing "advice and discussion" and 49 percent were

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acknowledged for providing comments on a manuscript. Because some articles included multiple acknowledgements, the percentages exceeded 100 percent.

Blaise Cronin (1991) undertook an analysis of the **Journal for the American Society for Information Science** between the years 1970 and 1990. Excluding editorials, biographical sketches, letters, obituaries, conference notes, and perspectives, Cronin analyzed research-type articles for acknowledgements. He identified 938 candidate articles and 444 of those had a formally worded acknowledgement. Cronin's classification scheme, which he states that he developed before seeing MacKintosh's, is shown in Table 3. The paymaster category covers the formal acknowledgement of grants, fellowships and scholarships received by the author;

Table 3: Cronin's typology of acknowledgements

Paymaster (C1)	Grants, scholarships, fellowships.
Moral support (C2)	Institutional backing, access to facilities, use of plant, use of equipment, familial support, access to data sets.
Dogsbody (C3)	Secretarial support, editorial and presentational guidance, assistance with routine data capture, entry, and analysis.
Technical (C4)	Programming advice, access to technical know-how, guidance on statistical procedures.
Prime mover (C5)	Inspiration or drive provided by principal investigator, project director, dissertation adviser, mentor, guru.
Trusted assessor (C6)	Feedback, critical analysis and comment from peers and co-workers acting as sounding boards and sources of new insights.

moral support covers access to, or use of, institutional facilities, including space, plant, equipment, libraries, and study areas; the dogsbody category collates acknowledgements for support from colleagues in such areas as bibliographic checking, routine data capture, entry and analysis; advice on statistical techniques, computer programming, experimental methods, questionnaire design, etc. are categorized as technical; the prime mover category is for

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individuals who have been influential in stimulating or nurturing the reported research, or who have acted as the principal investigator(s) or major dissertation adviser(s); the final category, trusted assessor, is for those who have influenced the reported work through their ideas, insights, feedback or critical analysis.

Cronin collapsed the sextet into three categories reflective of the principal common denominators: resource-related, procedure-related, and concept-related. The resource-related category concerns infrastructural, subsistence or facilitation aspects. The procedure-related category covers enabling techniques and services, while the third group (concept-related) is for those named or unnamed (in the case of anonymous referees) individuals whose inspiration and constructive criticism materially influenced the formation and presentation of the ideas in their published form. His purpose for collapsing all acknowledgements into the three macro categories was to reduce the error that might occur because of the ambiguity in wording of the acknowledgement; for instance in a few instances he might have had difficulty distinguishing between categories C5 (prime mover) and C6 (trusted assessor) when trying to classify acknowledgements. Unlike McCain who admitted to not categorizing nineteen of the acknowledgements because of their ambiguity, Cronin admitted having to "shoehorn" an acknowledgement into an approximately appropriate category. The text of each acknowledgement was analyzed for content and decomposed into it sub-elements.

Cronin discovered that more than 60 percent of the 444 articles contained at least one category 1 acknowledgement (C1 paymaster), while just under 8 percent contained at least one category 5 (C5 prime mover) acknowledgement. The majority of articles (91.2 percent) carried a resource-related acknowledgement, with concept and procedure-related mentions

taking second and third place, respectively. He found that 47 percent of the articles carried an acknowledgement to trusted assessors. Some of these, Cronin noted, were simply to express thanks for helpful comments made by anonymous reviewers, but many others provided potentially revealing insights into the relationship between the named author(s) and significant others in the field. In all, Cronin discovered that 420 individuals received at least one mention. Out of this population, only twenty-five received three or more mentions during the twenty-one year period.

In a subsequent study, Cronin, McKenzie, and Stiffler examined four of the top-ranked information science journals, **Library Quarterly**, **Journal of Documentation**, **Information Processing and Management**, and **College and Research Libraries**, over a twenty-one year period (1971-1990) and discovered that only twenty-nine individuals received three or more mentions. The twenty-year citation profiles of these individuals were generated from the **Social Sciences Citation Index**. Counting was restricted to the same set of four journals to ensure equivalence and limited to those items classified as articles by the Institute for Scientific Information. The acknowledgement and citation data were rank-ordered and the coefficient of correlation was computed to establish the degree of relatedness between the two measures. The authors found a positive rank order correlation significant at the .01 level between frequency of acknowledgement and citation frequency.

Despite the fact that each of these classification schemes was developed in isolation, they have much in common. Their differences, no doubt, reflect differences in the ways in which their knowledge is socially constructed and used from one discipline or field to another (Cronin, McKenzie, and Stiffler, 1992). Table 4 displays the similarities and differences in

Table 4: Classification schemes for acknowledgements

MacKintosh (1972)	Cronin (1991)	McCain (1991)
Facilities Access to data	Moral support	Access to research-related information Access to unpublished results/data
Help of individual - clerical	Dogsbody	Manuscript preparation
Help of individual - technical	Technical	Technical assistance
Help of individual - critical comment	Trusted assessor	Peer interactive communication - critical comment
	Prime mover	Peer interactive communication - "inspiration"
Facility - funding from institution	Paymaster	

the acknowledgement classification schemes of MacKintosh, McCain, and Cronin. Cronin's "moral support" category is similar to MacKintosh's "facilities" and "access to data" categories and McCain's "access to research-related information" and "access to unpublished results/data" categories since it captures acknowledgements that focus on institutional backing, access to facilities, use of plant, use of equipment, familial support, and access to data sets. Cronin's "dogsbody" category is similar to McCain's "manuscript preparation" category and the clerical sub-category of MacKintosh's "help of individual" since it captures those acknowledgements that focus on secretarial support, editorial and presentational guidance, assistance with routine data capture, entry and analysis. McCain's "technical assistance" category and MacKintosh's technical sub-category of "help of individual" resemble Cronin's "technical" category. Cronin's "trusted assessor" category is similar to MacKintosh's sub-category of critical comment contained within "help of individual" and McCain's "peer interactive communication" category for it captures the acknowledgement to those peer or peers who provide feedback, critical analysis and comment. Cronin's "prime mover"

category and McCain's "peer interactive communication" category are similar for it captures those persons who serve as inspirations to the research. Cronin's "paymaster" category and MacKintosh's "facilities" category are similar; however, MacKintosh's facilities category speaks specifically to funding from the institution. As MacKintosh noted in his dissertation, in the 1960s "large money grants are a relatively new thing in science and their advent has had discernable effects upon the obligation networks of scientists" (p. 30).

Having outlined the four acknowledgement studies, the literature review will now focus on the relationship between acknowledgements and citations. This will be followed by a brief discussion of alternative measures of scholarship in academe and the role acknowledgements could play in this conception of scholarship. The final part of the literature review will focus on the changing male/female demographics among faculty in the discipline of education.

Acknowledgements are not recognized in the same way as citations in determining the author's impact in the field. There exists an underlying assumption that number of citations is a useful measure of the impact of a scholar upon the field; therefore, citations can be used as an indicator of research contribution (Hayes, 1983). Acknowledgements, on the other hand, particularly those to the trusted assessor, anonymous referee or doctoral adviser, have not been seen as a useful measure of the impact of a scholar upon the field; consequently they are not used as an indicator of research contribution. It must be noted that the contributions of the trusted assessor or prime mover will not always be reflected via citation, but that does not take away from the intellectual debt owed to them (Cronin, 1991). Cronin (1991) discovered that authors take seriously, appreciate and have been influenced by, input from colleagues, advisers, and mentors. Cronin (1991) further discovered that, at least in the field of

information science, it is possible to identify and map networks of influence within the discipline.

Budd (1990) studied the characteristics of citation patterns in the higher education journal literature from 1982-1987 and identified twenty-one authors who are the most frequently cited and could thus be said to have a network of influence in the field. It should be noted that all twenty-one authors are male. A. W. Astin, E. T. Pascarella, and J. A. Centra are the three authors who have had a broad and deep impact on the literature. Budd also discovered that A. Biglan and K. E. Weick are very influential in the field; however, they are not identified especially with the field of higher education. Their inclusion in the list of twenty-one most cited authors attests to the interdisciplinary nature of higher education. Whether these authors will also appear as frequently in the subtler and less public role of trusted assessor or prime mover will serve as support for admitting acknowledgements to the established ranks of correlatives of citation status (e.g., peer judgement) and for using them as an additional indicator of impact, merit, or perceived influence (Cronin, McKenzie, Stiffler, 1992).

The use of acknowledgements as an additional indicator of impact, merit, or perceived influence is relevant as post-secondary institutions consider alternative measures of scholarship, specifically those advanced in the Carnegie Foundation's **Scholarship Reconsidered: Priorities of the Professoriate**. The report calls for a rebirth of scholarship to include discovery, integration, application, and teaching. As Boyer states, the scholarship of teaching both educates and entices future scholars. Mentoring is part of the scholarship of teaching, particularly if viewed from Levinson's perspective. Levinson states that the mentor

performs four functions and one of those is to act as a teacher to enhance skills and intellectual development (1972).

Lomperis (1990) in her study of the academic profession states that education is the only broad field today in which women earn the majority of doctorate degrees. This is the case because education experienced both the largest absolute increase in the number of new female doctorates between 1970 and 1987 (up by 2384), and between 1974 and 1987, the largest decrease in male doctorate recipients (down by 2435). Lomperis did not have the "ideal data set" that would have enabled her to trace the patterns of hiring, the nature of employment (full-time versus part-time), tenure status, rank, and salary of male versus female Ph.D.-trained college teachers in all fields at all institutions of higher education in the United States since 1970. However, she used the best available alternative - data from the United States Equal Employment Opportunity Commission, which allowed at least partial analysis of the demand side of academic labor markets over the last ten to fifteen years. She determined that during the period between 1975 and 1985, women did proportionally better than their male counterparts in moving up the academic ladder to senior positions.

In summary, the current research on acknowledgements as revealed by the literature review supports the notion that by excluding acknowledgements from the audit process and focusing on citations, institutions may be discriminating against those whose influence is registered or reflected in ways other than, or supplementary to, publication and subsequent citation. The use of acknowledgements in the audit process appears to be consistent with the move to consider alternative measures of scholarship. However, there are gaps in the research on acknowledgements that this study will address. To date, none of the acknowledgement

studies have examined the pattern of acknowledgements in a professional field, such as higher education nor have they looked at the male/female composition of those who were acknowledged. The latter issue is of particular interest, in light of Lomperis' study, to determine if women in the discipline of higher education have penetrated the male-dominated network of influence.

PURPOSE

Based upon the rationale advanced in the introduction and literature review, the researcher identified four major objectives that form the purpose of this research. The first objective is to determine the extent to which Cronin's (1991) typology is adequate to capture the acknowledgement patterns in a core journal in the field of higher education, the **Journal of Higher Education** (**JHE**). By identifying trusted assessors and prime movers from among those individuals acknowledged in the **Journal of Higher Education**, the second objective is to determine if there is a set of highly acknowledged individuals in the field of higher education who may be perceived to intellectually influence the discipline. Again, by identifying trusted assessors and prime movers from among those individuals acknowledged in **JHE**, the third objective is to determine if the pattern of those acknowledged has changed given the changing demographics of the professorate since 1972 (Lomperis, 1990) to include more women. The fourth, and final objective, is to determine if those who are highly acknowledged as trusted assessors and prime movers are also highly cited in journals identified as "education" in **Ulrich's International Periodical Directory** and in articles published in those journals between 1972 and 1993 inclusive.

The four questions that will be addressed in this research paper are as follows:

1. Using Cronin's (1991) typology, what are the patterns of acknowledgements in the **Journal of Higher Education** and does the classification scheme capture the acknowledgement patterns in the field of education?

2. Is there a set of highly acknowledged individuals, defined as trusted assessors and prime movers, in the field of higher education literature who could be said to intellectually influence the discipline?

3. Has the pattern of those highly acknowledged changed over the past two decades to include more women?

4. Are those who are highly acknowledged in the **Journal of Higher Education** also highly cited in journals identified as "education" in **Ulrich's International Periodical Directory** and in articles published between 1972 and 1993 inclusive?

METHODOLOGY

Acknowledgements come in all shapes and sizes, ranging from the tersely impersonal to the baroquely subjective (Cronin, McKenzie, Stiffler, 1992). What is acknowledged, Cronin (1992) states, can be as basic as access to library facilities, as obvious as secretarial support, or as subtle and formative as intellectual influence. The six-part typology, developed by Cronin in 1991 and previously described in Table 3, is used to examine the acknowledgements found in the **Journal of Higher Education** for the years 1972-1993 inclusive.

The **Journal of Higher Education** is published six times per year with a circulation of 4,500. The five or six articles found in each issue focus on a broad range of topics in higher education that are of interest to higher education faculty and administrators. The articles emphasize current trends and issues related to educational psychology, educational technology, and administration (Buttlar, 1989). The journal articles are selected for publication using a blind review system.

In terms of its reputation, it is the second most highly cited journal in higher education (Budd, 1990). Prior to Alan Bayer's (1983) study there were no reputational assessments done that focused on journals that are principally devoted to higher education content or that employed samples of professionals who devote their study to the field of higher education. Bayer asked Association of Higher Education (ASHE) members to rank the "top ten" journals in the field. The **Journal of Higher Education** was ranked number one by 209 administrators and non-administrators. Bayer concluded, however, that unlike its "sister" disciplines where at least rudimentary general consensus can be obtained as to which are "flagship" journals, there is not a readily identifiable core among higher education periodicals.

Although the **Journal of Higher Education** was first published in the 1930s, the researcher chose the period 1972 to 1993 inclusive for several reasons. First, it covers roughly the same time period as Cronin's study. Secondly, the year 1972 is regarded as a turning point for women with the passage of the Equal Opportunity Act and the implementation of federally mandated affirmative action programs. Most studies that examine women's participation in higher education use 1972 as a benchmark year.

Acknowledgements in the **Journal of Higher Education** are found at the bottom of the first page of the article. They are distinguished from the main article by their type-size, which is smaller. An example of one such acknowledgement is: "I am indebted to Charles Warriner, professor of sociology at the University of Kansas, who first stimulated my interest

in the study of universities. Joseph Cosand and Marvin Peterson offered useful comments on a draft of this paper."[2]

As Cronin discovered in his earliest work, it is not always an entirely straightforward matter to differentiate between opinion papers, research articles, perspectives, historical sketches, and review articles. As far as practicably possible, the sample from the **Journal of Higher Education** excludes commentaries, biographical sketches, letters, conference notes, perspectives, review essays, and other ephemera. The 50th anniversary edition that appeared in the 1979 volume was also excluded from the sample since articles were taken from early volumes of the **Journal of Higher Education**. The study is based, therefore, on acknowledgements found in research-type articles spanning the period from 1972 to 1993 inclusive.

Each acknowledgement was copied and mounted on a 5X8" index card . Included on each card were the title and author(s) of the article, information about the author(s), and the volume, number, and year the article appeared in **JHE**. The cards were then numbered sequentially with number one being the first journal article to appear in 1972 and number 293 being the last journal article to appear in 1993. Using Cronin's (1991) descriptions and examples, the researcher analyzed each acknowledgement for content and recorded on each 5X8" card the category of acknowledgement using the following codes: P for paymaster; MS for moral support; DB for dogsbody; T for technical; TA for trusted assessor; and PM for

[2]Clifton Conrad, "University Goals: An Operative Approach," **Journal of Higher Education**, 45 (7), (October 1974), 504.

prime mover. Allen and Reser (1990) refer to this method of content analysis as "classification analysis" in which documents or other means of communication are assigned to classes or categories so that one or more of their characteristics can be quantified. The acknowledgements ranged from a brief one line of gratitude to a funding body to a paragraph-length statement acknowledging multiple influences. In those instances in which there were multiple acknowledgements, each acknowledgement was counted and placed in its appropriate category. For example, the acknowledgement "The authors gratefully acknowledge the inspiration and financial support given by Dean F. P. Kilpatrick of the College of Social and Behavioral Sciences, to Dr.. Burgess and the Behavioral Science Laboratory for undertaking and supporting all aspects of the study, and to C.R. Hofstetter and OSU Poll for their part in conducting part of the data gathering"[3], was coded P, PM, MS, and DB.. Kilpatrick was counted as both "paymaster" and as "prime mover" since he provided both the financial support and the inspiration for the research.

Some of the acknowledgements were not easily classified because of the perceived ambiguity in the wording. For example, in this acknowledgement appearing in a 1976 volume of **JHE**, "The authors gratefully acknowledge the assistance of Paul Cheney, Marcia Hanson,

[3]Leonard C. Hawes, "Student Participation in the University Decision-Making Process," **Journal of Higher Education**, 45 (2), (February 1974), 123.

and Malcolm Munro,"[4] it was unclear in what ways these individuals assisted the authors. Rather than "shoehorn," to use Cronin's word, an acknowledgement into an approximately appropriate slot the researcher created a new category entitled "Unknown." Although this is further elaborated upon in the results section, there were very few incidences in which the acknowledgement was sufficiently ambiguous as to warrant placing it in the "unknown" category.

Another issue related to coding concerned the unnamed individuals who were acknowledged by authors as "anonymous referees" or "anonymous reviewers." Cronin counted these unnamed individuals as trusted assessors since anonymous reviewers or referees, as peers, provide feedback, critical analysis, and comment. In this research, "anonymous reviewers" or "anonymous referees" were counted as trusted assessors.

Upon coding the acknowledgements the researcher recorded the data using Quatro Pro. Five columns were created: article number, year, acknowledgement code, last name of individual acknowledged, and first name of individual acknowledged. The article number corresponded to the number given each 5X8" card (i.e., 1-293). The year corresponded to the year the journal article appeared in **JHE** (i.e., 72-93). P, MS, DB, T, TA, PM were the acknowledgement codes. Last name and first name were entered for those acknowledgements that were coded with PM or TA. Using the example above, Kilpatrick F. P. appears in the last/first name columns of entry number 27.

[4]Carl R. Adams, Theodore E. Kellogg and Roger Schroeder. "Decision-Making and Information Systems in Colleges: An Exploratory Study." **Journal of Higher Education**, 47 (1), January/February 1976), 33.

From the data entered, the researcher generated four reports. The first report arranged the data in ascending order by article number. The second report arranged the data by acknowledgement code. The third report arranged the data by PM (prime mover) and TA (trusted assessor) alphabetically by name. The fourth and final report arranged the data by PM and TA by year. Using these reports, the researcher counted each incidence to derive the numbers that are discussed in the results section of the paper.

To ensure that the results of the study were "dependent on the procedure and not the analysts" (Stempel, 1981), the researcher asked two other people to independently code a randomly selected set of acknowledgements. Using a random-number table, the researcher selected the number 2. The researcher drew the second card from each year of the **JHE** for a sample of 22. The percentage of agreement with the one coder was 86 percent; with the second coder 45 percent. The discrepancy in agreement can be attributed, in part, to the circumstances under which the second person coded the sample. The circumstances were such that the coder felt rushed to complete the assignment and perhaps did not have an opportunity to read the descriptions and examples provided by the researcher as thoroughly as he might have.

Beyond the simple aim of determining the extent to which the picture of acknowledgements suggested by Cronin's 1991 analysis applies to a journal outside the information science field, the second primary objective of this research was to identify highly acknowledged individuals who served as either prime mover (Cronin's Category 6) or trusted assessor (Cronin's Category 5), for it is within these categories that it becomes theoretically possible to identify and map networks of influence within a discipline (Cronin, 1991). To

generate this list, the researcher examined the third Quatro Pro report (an alphabetical listing of those who had been coded PM or TA) for the names of individuals who were acknowledged three or more times. The number three was chosen as a baseline because that is the number that Cronin (1992) used as a cut-off point for inclusion in the "highly acknowledged" population in his study.

The third primary objective of this research was to determine if the pattern of those acknowledged as trusted assessors and prime movers has changed given the increase of women into the professorial ranks since 1972. The researcher established three time periods: 1972-1979, 1980-1989, and 1990-1993. Using the alphabetical list of prime movers and trusted assessors, which included the date the acknowledgement appeared, the researcher placed each of the prime movers or trusted assessors who had been acknowledged three or more times in a time period depending upon the date of the acknowledgement. The highly acknowledged individuals were then listed alphabetically within each decade.

The fourth, and final, objective of this research was to establish the extent to which this subset of highly acknowledged individuals are also highly cited in education journals. Unlike Cronin, who restricted his citation counting to four journals (**Library Quarterly**, **Journal of Documentation**, **Information Processing and Management**, and **College and Research Libraries**), this researcher elected to restrict the citation counting to education journals. The interdisciplinary nature of the field of education necessitated this approach. A list of the education journals used in this study is found in the Appendix. The researcher chose to use **Social Science Citation Index**. One inherent difficulty in using **SSCI** is that citations are recorded using the last name and first initial, which leaves room for error in identification. To

verify the names of the highly acknowledged individuals, the researcher used the CD ROM version of **ERIC** and linked the cited work and the full name of the acknowledged individual. All of the highly acknowledged individuals were verified in this manner. The researcher searched **SSCI** and was able to identify a complete set of the individual's citations for all but one highly acknowledged individual. In one case, citations were found under both the highly acknowledged individual's first initial and first and middle initial. The researcher limited the citation study by searching for articles that were published in journals between the years 1972 and 1993 inclusive.

Upon identifying the highly acknowledged individuals' citations, the researcher cross-checked each of the highly acknowledged individual's citations against the journals that **Ulrich's International Periodical Directory** identifies as "education." (See Appendix for list of journals.)

A detailed description of the findings of the study is found in the next section. It is followed by a discussion of the results and conclusions.

RESULTS

The first question addressed is: Using Cronin's typology, what are the patterns of acknowledgements in a core journal in the field of higher education? As Table 5 shows (page 25), in the twenty-one year period, a total of 755 candidate articles was identified, of which 38.8 percent (293) had a formally worded acknowledgement. The percentages range from a low of 14 percent in 1982 to a high of 63 percent in 1993.

Cronin folded his six categories into three categories reflective of the principal common denominators: resource-related (C1 and C2); procedure-related (C3 and C4); and concept-

Table 5: JHE articles 1972-1993 containing formal acknowledgements

Year	No. of Articles	No. With Acknowledgements	% With Acknowledgements
1993	27	17	63%
1992	26	15	58%
1991	27	14	52%
1990	29	15	52%
1989	30	14	47%
1988	27	15	56%
1987	30	15	50%
1986	29	10	34%
1985	33	13	39%
1984	32	14	44%
1983	29	11	38%
1982	37	5	14%
1981	31	13	42%
1980	34	18	53%
1979	33	10	30%
1978	36	16	44%
1977	36	18	50%
1976	34	16	47%
1975	40	17	43%
1974	42	12	29%
1973	43	7	16%
1972	27	8	30%
Total	**755**	**293**	**38.8%**

related (C5 and C6). The first of these is not directly concerned with cognitive issues, but with infrastructural, subsistence or facilitation aspects; the other two have a more direct, though quite different, bearing on the scholarship, according to Cronin (1991, p. 231). The procedure-related category covers enabling techniques and services, while the third group (concept-related) is for those named or unnamed (in the case of anonymous referees) individuals whose inspiration and constructive criticisms have materially influenced the formation and presentation of the ideas in their final published form (Cronin, 1991, p. 231). Table 6 shows that across 293 acknowledgement-bearing **JHE** articles during a twenty-one year period the majority of acknowledgements (81.2 %) were resource-related. Just over

Table 6: Distribution of acknowledgements, by category, across 293 acknowledgement-bearing JHE articles 1972-1993

Category	C1	C2	C3	C4	C5	C6	C7
	Resource related		Procedure related		Concept related		Unknown
Numbers	176	62	61	34	18	143	10 [1]
	238		95		161		
Percentages [2]	60%	21.2%	20.8%	11.6%	6.2%	49%	
	81.2%		32.4%		55.1%		3.4%

1 From wording of acknowledgement it was unclear about the category
2 Percentages add up to more than 100 because articles contain more than one acknowledgement

55 percent of the acknowledgements were concept-related, that is to say, they acknowledged a prime mover or a trusted assessor. Thirty-two percent of the acknowledgements were procedure-related, that is, they acknowledged an individual or individuals for technical, editorial, or secretarial assistance. In slightly over 3 percent of the acknowledgement-bearing articles was the researcher unable to attach an acknowledgement to a specific category. Within

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the concept-related category, almost half of the sample carry C6-type acknowledgements to trusted assessors. Some of these express thanks for helpful comments made by anonymous referees (30 percent of the concept-related acknowledgements), but many others provide insight into the relationship between the named author(s) and significant others in the field. The scale of acknowledgement activity can be gauged from the fact that in all 327 individuals received at least one acknowledgement.

Figure 1 shows the frequency distribution. The pattern is one of extreme concentration, with a tiny minority of individuals attracting multiple mentions and a massive majority (316 or 96.6%) receiving only a single mention. Out of a population of 327 acknowledged peers, only eleven received three or more mentions during the twenty-one year time period. It appears that there is a set of highly acknowledged individuals in the field of higher education (Question 2).

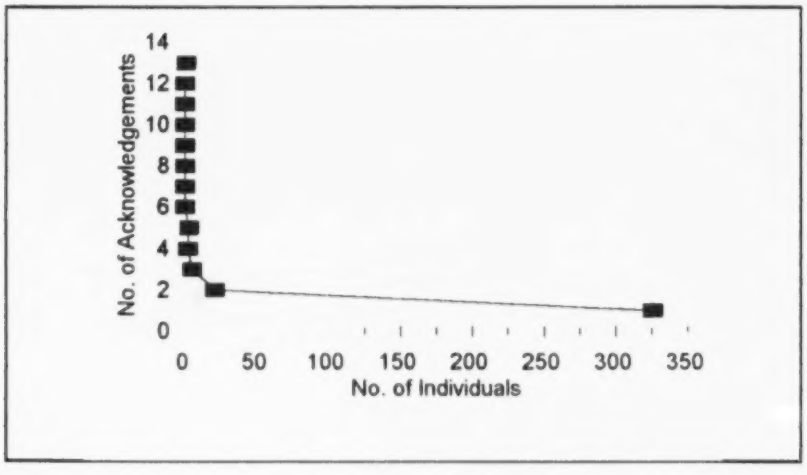

Figure 1: Number of acknowledgements identified per individual

The top eleven names are shown in rank order in Table 7. Robert J. Silverman, who leads the list with thirteen acknowledgements, is Professor of Higher Education and

Table 7: Individuals acknowledged three or more times JHE 1972-1993

Name	Acknowledgement Score
Silverman Robert J.	13
Bensimon, Estela M.	5
Birnbaum, Robert	5
Davidson, Colleen T.	5
Berg, David J.	4
Moore, Kay M.	4
Bayer, Alan E.	3
Chaffee, Ellen E.	3
Chait, Richard	3
Peterson, Marvin W.	3
Toombs, William	3

Student Affairs at The Ohio State University, and until last year was editor of the **Journal of Higher Education**. Estela Bensimon and Robert Birnbaum each with five acknowledgements are professors of higher education at the University of Southern California and University of Maryland, respectively. Colleen Davidson, also with five acknowledgements, was last known to be serving in an administrative position at the University of Minnesota. Kay Moore, with four acknowledgements, is chairperson of the Department of Educational Administration at Michigan State University. David Berg, also with four acknowledgements, was last known to be at the University of Minnesota serving as assistant vice-president for management and information services. Alan Bayer, Ellen Chaffee, Richard Chait, Marvin Peterson, and William Toombs, each have three acknowledgements. Alan Bayer is department chairperson of the Department of Sociology at Virginia Polytechnical Institute in Blacksburg, Virginia.

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Ellen Chaffee is Vice-Chancellor of the Coordinating Board for the State of North Dakota. Richard Chait, Marvin Peterson, and William Toombs are professors at University of Maryland, University of Michigan, and Pennsylvania State University, respectively. If the threshold applied in the present study is lowered to two mentions, then twenty-one names can be added, among them such names as: A. W. Astin, R. T. Blackburn, and E.J. Pascarella, all three of whom appear on Budd's (1990) list of most highly cited authors. In summary, of the eleven highly acknowledged individuals, three either held administrative positions at the time they were acknowledged or currently hold administrative positions in higher education and eight currently hold faculty positions.

Has the pattern of those acknowledged changed over the past two decades to include more women? Table 8 shows that in the decade 1972-1979, of the eleven most highly acknowledged individuals, one out of seven acknowledgements (14.2%) went to a woman, Colleen Davidson. In the decade 1980-1989, of the eleven most highly acknowledged individuals, nine out of twenty-one acknowledgements (42.8%) went to women, Ellen Chaffee, Kay Moore, Estela Bensimon, and Colleen Davidson. If Robert Silverman, as editor of **JHE**, is removed from the list, 52.9 percent of the acknowledgements in that decade went to women. In the decade 1990-1993, of the eleven highly acknowledged individuals, seven out of twenty-three acknowledgements (30.4%) went to women, Ellen Chaffee, Kay Moore, and Estela Bensimon. If Robert Silverman is removed from the list, 43.7 percent of the acknowledgements in that decade (which is less than one third over) went to women.

Are those who are highly acknowledged also highly cited? All eleven names were checked against **Social Science Citation Index**. The citation totals and rankings are shown in

Table 8: Individuals acknowledged three or more times in JHE 1972-1993 by decade

1972-1979	1980-1989	1990-1993
Bayer, A. (76)[1]	Bayer, A. (87)	Bayer, A. (91)
Berg, D. (77)	Bensimon, E. (85)	Bensimon, E. (90,91,91,92)
Davidson, C. (77)	Berg, D. (80,82,88)	Birnbaum, R. (90,90,91,91)
Peterson, M. (74)	Birnbaum, R. (84)	Chaffee, E. (90,90)
Silverman, R. (77,79)	Chaffee, E. (84)	Chait, R. (90,90)
Toombs, W. (77)	Chait, R. (84)	Moore, K. (93)
	Davidson, C. (80,82,82,87)	Peterson, M. (90,90)
	Moore, K. (88,88,89)	Silverman, R. (90,90,90,91,91,92,93)
	Silverman, R. (80,82,85,89).	
	Toombs, W. (84,89)	

1 Year the acknowledgement appeared in JHE

Table 9 along with the corresponding acknowledgement data. The citation range is from 0 (Colleen Davidson) to 241 (Alan Bayer). The next highest is Robert Birnbaum with 131. Of the four women, Kay Moore has the highest number of citations (76), followed by Chaffee (54) and Bensimon (23). The coefficient of correlation (Spearman R) is -.284855, which is statistically not significant. Gamma takes into account the number of tied observations, whereas Spearman R does not. Gamma is -.219512, which is statistically not significant.

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Table 9: Citation[1] and acknowledgement rankings for individuals acknowledged three or more times in JHE 1972-1993

Name	Citation		Acknowledgement	
	Score	Rank	Score	Rank
Bayer, A.	240	1	3	4
Birnbaum, R.	131	2	5	2
Moore, K.	76	3	4	3
Peterson, M.	68	4	3	4
Chaffee, E.	54	5	3	4
Toombs, W.	35	6	3	4
Silverman, R.	30	7	13	1
Bensimon, E.	23	8	5	2
Chait, R.	16	9	3	4
Berg, D.	9	10	4	3
Davidson, C.	0	11	5	2

1 Citations appeared in education journals as designated by **Ulrich's International Periodical Directory, 1993-1994**.

DISCUSSION

The base data used in this research were drawn from a single journal, the **Journal of Higher Education**, in a small field (higher education) and covered a relatively short time period (twenty-one years). Despite the modest scale of the analysis, it is clear that acknowledgement plays an important role in the formal reporting of research results, at least as far as **JHE** is concerned.

MacKintosh's (1972) study found that the frequency of all acknowledgements in the **American Sociological Review** increased from 19 percent in 1940 to 62 percent in 1965. Similarly, Cronin found that almost 50 percent of research papers in **JASIS** carried an explicit acknowledgement of some type, with the highest acknowledgment rates appearing in the from

1986 to 1990 inclusive.. Although only 38.8 percent of the articles in **JHE** carried an acknowledgement, with the exception of 1989, the past five years have shown an acknowledgement rate over 50 percent. Based on the similarity in acknowledgement rates in the **American Sociological Review**, **JASIS,** and **JHE** it could be concluded that acknowledgement is becoming a normative behavior.

The results of this study parallel Cronin's 1991 study in the distribution of acknowledgements by category in that the majority of acknowledgements were resource-related, followed by concept-related and procedure-related. Higher education's designation as a professional field did not appear to affect the pattern of acknowledgments witnessed in the more academic field information science. Acknowledgements in the paymaster and moral support categories (resource-related) are perhaps little more than ordinary good manners: thanking funders, sponsors, and hosts for monetary or material support. Such support may lubricate the research process, as Cronin states, but it does not substantively influence the cognitive dimension. Similarly, acknowledging those whose skills have helped reduce the level of drudgery (data entry clerk, statistician) is just being decent. These types of acknowledgements have been collated under the dogsbody and technical categories and although they are not central to the conceptual underpinnings of the work being described, they do contribute to the overall efficacy of the project (Cronin, 1991). It is really with the concept-related category, prime movers and trusted assessors, that it becomes possible to identify and map networks of influence in a discipline (Cronin, 1991).

Of the eleven highly acknowledged individuals, seven are faculty members in universities with prestigious departments of education. The eighth, Alan Bayer is a sociologist

and is the only faculty member who is in a discipline outside of higher education. This homogeneity in acknowledgement patterns was surprising given the cross-disciplinary nature of the field of higher education. Within this group of eleven individuals it was also interesting to note that Birnbaum (University of Maryland), Bensimon (University of Southern California), and Chaffee (State of North Dakota Coordinating Board) were often acknowledged in the same article suggesting the existence of a network of influence that goes beyond geographical proximity to one another.

Of most interest was the apparent growing influence of women in the field of higher education as revealed in acknowledgement patterns. In the decade of the 1970s, only one woman, Colleen Davidson, was acknowledged. In the decade of the 1980s, four women were acknowledged: Kay Moore, Ellen Chaffee, Colleen Davidson, and Estela Bensimon. In the decade of the 1990s, three women were acknowledged: Kay Moore, Ellen Chaffee, and Estela Bensimon. Perhaps the most interesting women to observe are Davidson who went from being acknowledged once in the 1970s to four times in the 1980s and Bensimon who went from one acknowledgement in the 1980s to four acknowledgements in the first three years of the 1990s. When the researcher asked Professor Mary Ann Sagaria of Higher Education and Student Affairs at The Ohio State University, about the careers of these eleven individuals she described Bensimon as a rising star in the field of higher education. Bensimon recently left her faculty position at Pennsylvania State University's Center for the Study of Higher Education to become a full professor at University of Southern California's Center for the Study of Higher Education. Kay Moore is consistently acknowledged. In the late 1980s she was acknowledged three times and in the first three years of the 1990s she was acknowledged

twice. Kay Moore was at one time Pennsylvania State University's Director of the Center for the Study of Higher Education before moving to her current position at Michigan State University. Based on these limited findings, one could say that at least in the field of higher education, women appear to be penetrating the acknowledgement network. Also given the prestige of the Pennsylvania State University's Center for the Study of Higher Education, it is a logical base for networks to form.

Unlike Cronin's 1992 study where he found a positive correlation between those who were highly acknowledged and those who were highly cited, that cannot be said in this study. Being highly acknowledged does not correlate with being highly cited. This difference might be attributed to the method of counting citations. Cronin restricted the citation count to four journals, **Library Quarterly**, **Journal of Documentation**, **Information Processing and Management**, and **College and Research Libraries**, whereas this researcher restricted the citation count to education journals.

There are, nevertheless, several interesting observations about the rankings. One is that Colleen Davidson, one of the more highly acknowledged individuals with five mentions is not cited at all in any of the journal literature. Second is that Robert Silverman, the most highly acknowledged individual with thirteen mentions is ranked seventh (out of eleven) in citations. His high acknowledgement rating is expected given that he was editor of **JHE**. Third is that Alan Bayer ranks first in citations with 240 and yet ranks ninth (along with Chaffee, Chait, Peterson, and Toombs) in acknowledgements. Also interesting to note is that Bayer is the only one of the eleven acknowledged individuals who can be found on Budd's (1990) list of most cited authors. In Budd's study, Bayer ranked fourteenth out of 20.5 for

most cited author excluding self-citation. Of those twenty-one individuals acknowledged twice in the **Journal of Higher Education** three of them appear on Budd's list of most highly cited authors: A.W. Astin, R.T. Blackburn, and E.J. Pascarella. Astin and Pascarella ranked one and two on Budd's list of most highly cited authors excluding self-citation. Since only one out of the eleven who were highly acknowledged appeared on Budd's list, it appears that it takes considerably longer for an author to develop a substantial body of work from which the author can be cited than it does for the author to be acknowledged. Since citation rank and acknowledgement are non-overlapping, it suggests that each are worthy of independent recognition as a measure of scholarship. This is particularly the case if acknowledgement is linked to teaching and mentoring and seen as a way of advancing in the field separate from research.

CONCLUSION

Although citations and acknowledgements have certain features in common, the parallel should not be forced (Cronin, McKenzie, Stiffler, 1992). The typical scholarly paper carries an average of twenty citations whereas only one in every three scholarly papers in **JHE** carries an acknowledgement. The population differences are thus at the orders of magnitude level, but this does not mean acknowledgements are not worthy of critical attention (Cronin, McKenzie, Stiffler, 1992). The data used in this study were derived from one journal in the field of higher education. One observation about the use of acknowledgements in the **Journal of Higher Education** is that there appears to be an accumulative affect. In 993, for example, 63 percent of the articles carried an acknowledgement as compared to 30 percent in 1972. The steady increase in the use of acknowledgements may be because as authors prepare articles for

publication in the **Journal of Higher Education** they see that acknowledging financial sponsors, secretarial support, institutions for their facilities is the norm.

Citation conventions are established across disciplines, linguistic and cultural lines. Acknowledgements, as Cronin states, appear to be a much more cultural variable and a subjective activity. The rules of the acknowledgement game have yet to be laid down (Cronin, McKenzie, and Stiffler, 1992). Nonetheless, both citation and acknowledgement serve a variety of overlapping or complementary functions. According to Cronin, both provide a degree of "contextualization and coloratura; both reveal webs of interaction and connectedness; both record intellectual debt; both can be viewed as units of symbolic capital" (1992, p. 121).

This study has shown that the majority of acknowledgements are resource-related but that concept-related acknowledgements compose over half of the acknowledgements in the **Journal of Higher Education**. There does appear to be a cluster of highly acknowledged individuals, predominantly professors, in the field of higher education. Furthermore, women appear to be making gains in the world of acknowledgements in more significant numbers during the decades of the 1980s and 1990s, at least as reflected in the **Journal of Higher Education**.

The negative rank-order correlation between acknowledgements and citation ranks indicates that acknowledgements and citations appear to be non-overlapping. However, if the view of scholarship is expanding, as Boyer suggests, the evidence of acknowledgements might also be included in materials prepared for tenure and promotion as well as student evaluations, citations, reviews, and so forth.

The results of this study suggest future areas of research. One is to compare acknowledgements and citations from among a sample of the 327 acknowledged peers rather than restricting the comparison to just the most highly acknowledged. Another is to restrict the citations to higher education journals or to just the **Journal of Higher Education**. Yet another area for possible research is to examine the relationship between acknowledgements and the rate of publication and other prestige dimensions. The relationship between acknowledgements and other demographics, such as: affiliations with associations; service on editorial boards; academic rank, years in academe; and co-authorships as indicators of networks might also be examined. With over half of the acknowledgement-bearing articles in the **Journal of Higher Education** expressing gratitude to a trusted assessor or prime mover, further analysis of the relationship between acknowledgement patterns and faculty adviser or mentor might bear fruitful results. A final area of future research might be to examine the relationship between acknowledgements and association activities, in other words, are those with a service orientation also more likely to be acknowledged?

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APPENDIX

List of education journals.
Journals designated with a * appeared in the psychology section of **Ulrich's International Periodical Directory**; however, these journals are indexed in College Student Personnel Abstracts, Educational Administration Abstracts, Research in Higher Education Abstracts and for that reason are included on this list.

Academe - Bulletin of AAUP
Alberta Journal of Education
American Journal of Education
American Journal of Pharmaceutical Education
British Journal of Educational Studies
College and University
Comparative Education
Counselor Education and Supervision
Economics of Education Review
Education
Educational Adminstration Quarterly
Educational Forum
Educational Gerontology
Educational Policy
Elementary School Journal
Harvard Educational Review
Higher Education
Higher Education Quarterly
History of Education Quarterly
Interchange
International Journal of Educational Development
International Journal for the Advancement of Counseling
International Review of Education
Journal of Chemistry Education
Journal of College and University Personnel Association
Journal of College Student Development (formerly Journal of College Student Personnel)*
Journal of Counseling and Development (formerly Personnel and Guidance Journal)*
Journal of Education for Library and Information Science (formerly Journal of Education for Librarianship)
Journal of Educational Administration
Journal of Educational Research
Journal of Educational Psychology*

Journal of Experimental Education
Journal of Higher Education
Journal of Legal Education
Journal of Negro Education
Journal of Personnel Evaluation in Education
Journal of School Health
Journal of Social Work Education
Journal of Teacher Education
Liberal Education
Measurement and Evaluation in Guidance
Minerva Quarterly
Oxford Review of Education
Peabody Journal of Education
Phi Delta Kappan
Quest
Reading Research Quarterly
Research in Higher Education
Review of Educational Research
Sociology of Education
Studies in Higher Education
Teachers College Record
Zeitschrift fuer Padagogik